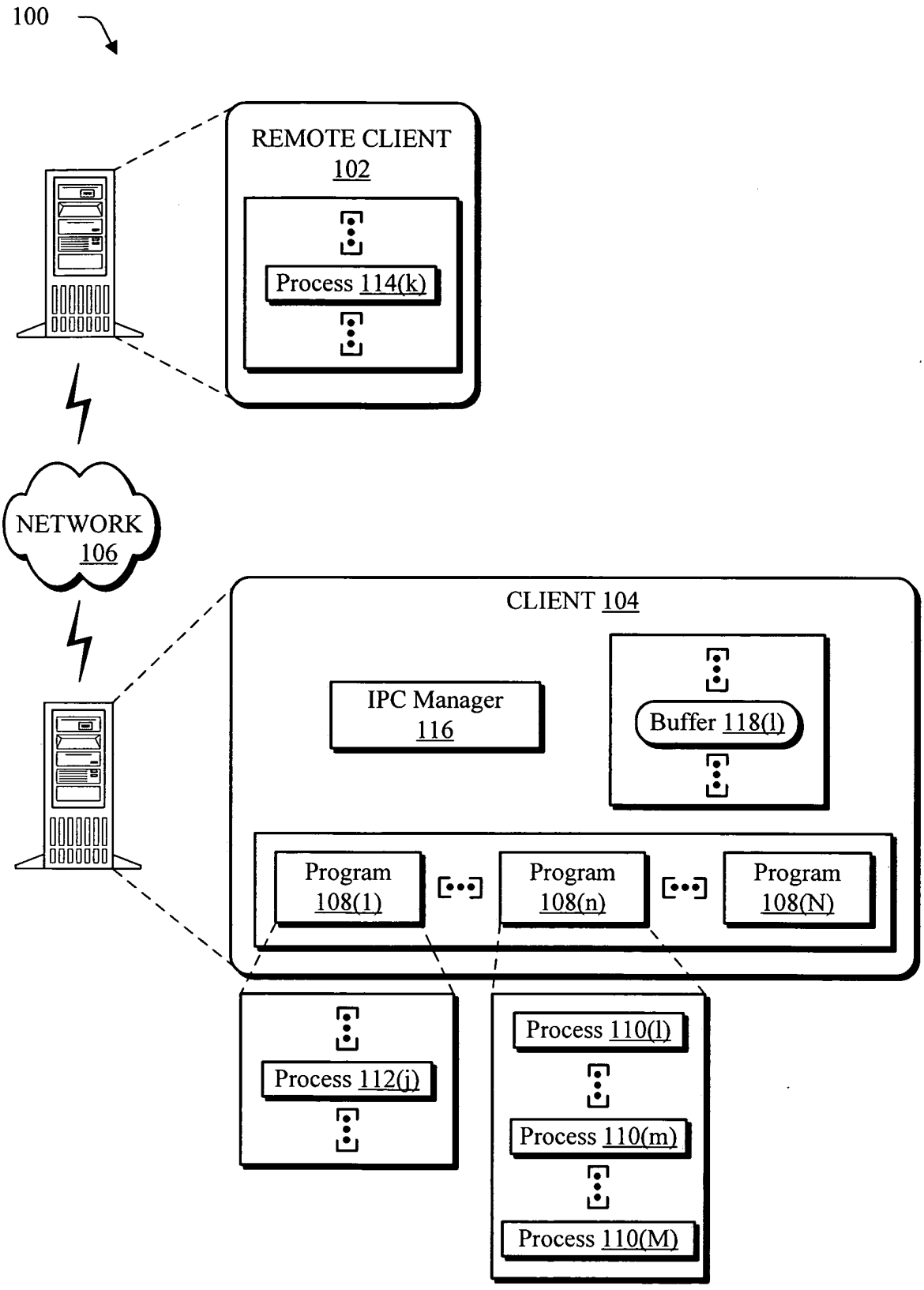
100
REMOTE CLIENT
102
Process 114(k)
NETWORK
106
CLIENT 104
IPC Manager
116
Buffer 118(l)
Program
108(1)
Program
108(n)
Program
108(N)
Process 112(j)
Process 110(l)
Process 110(m)
Process 110(M)

Fig. 1

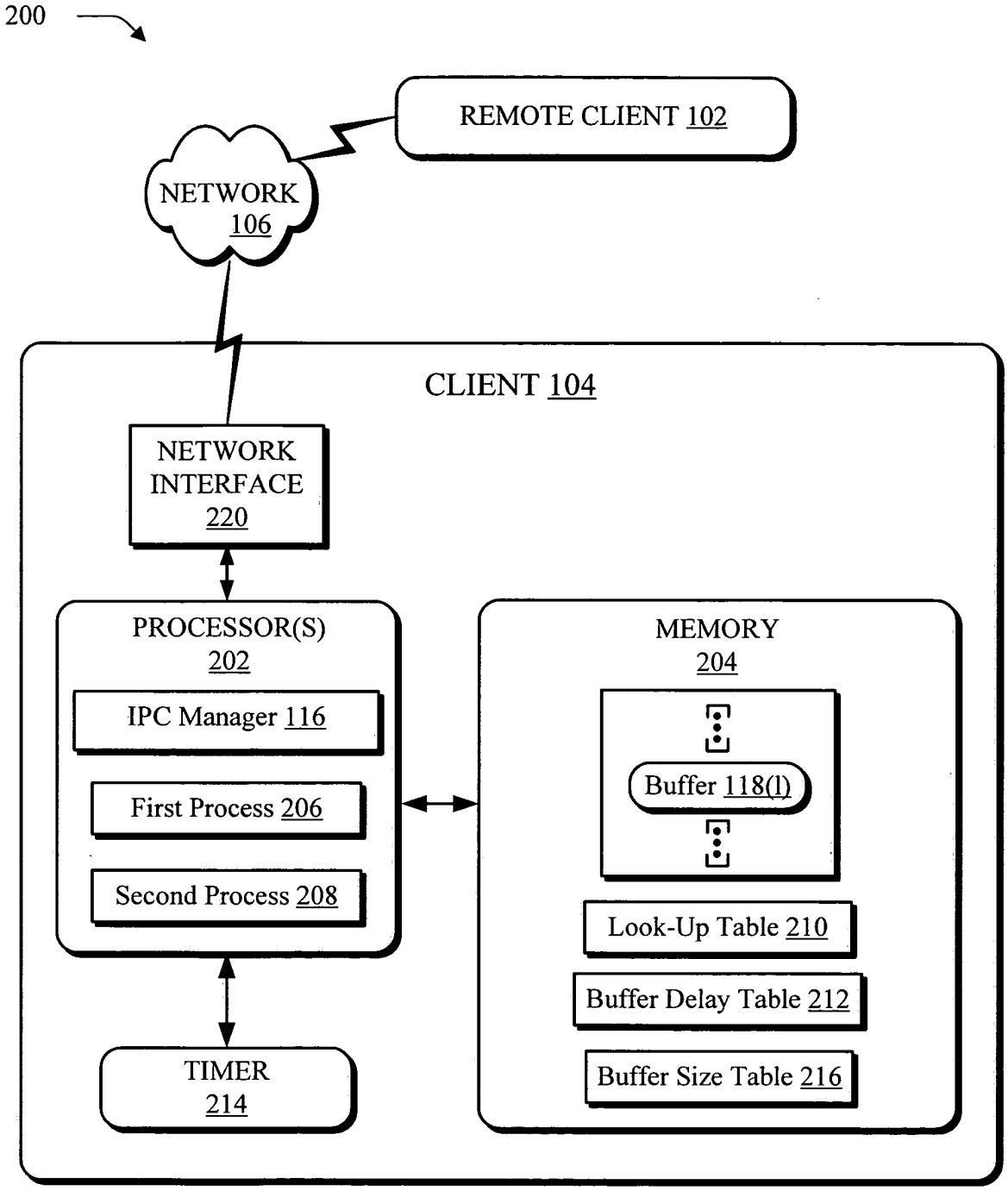
200
REMOTE CLIENT 102
NETWORK 106
CLIENT 104
NETWORK INTERFACE 220
PROCESSOR(S) 202
IPC Manager 116
First Process 206
Second Process 208
TIMER 214
MEMORY 204
Buffer 118(l)
Look-Up Table 210
Buffer Delay Table 212
Buffer Size Table 216

Fig. 2

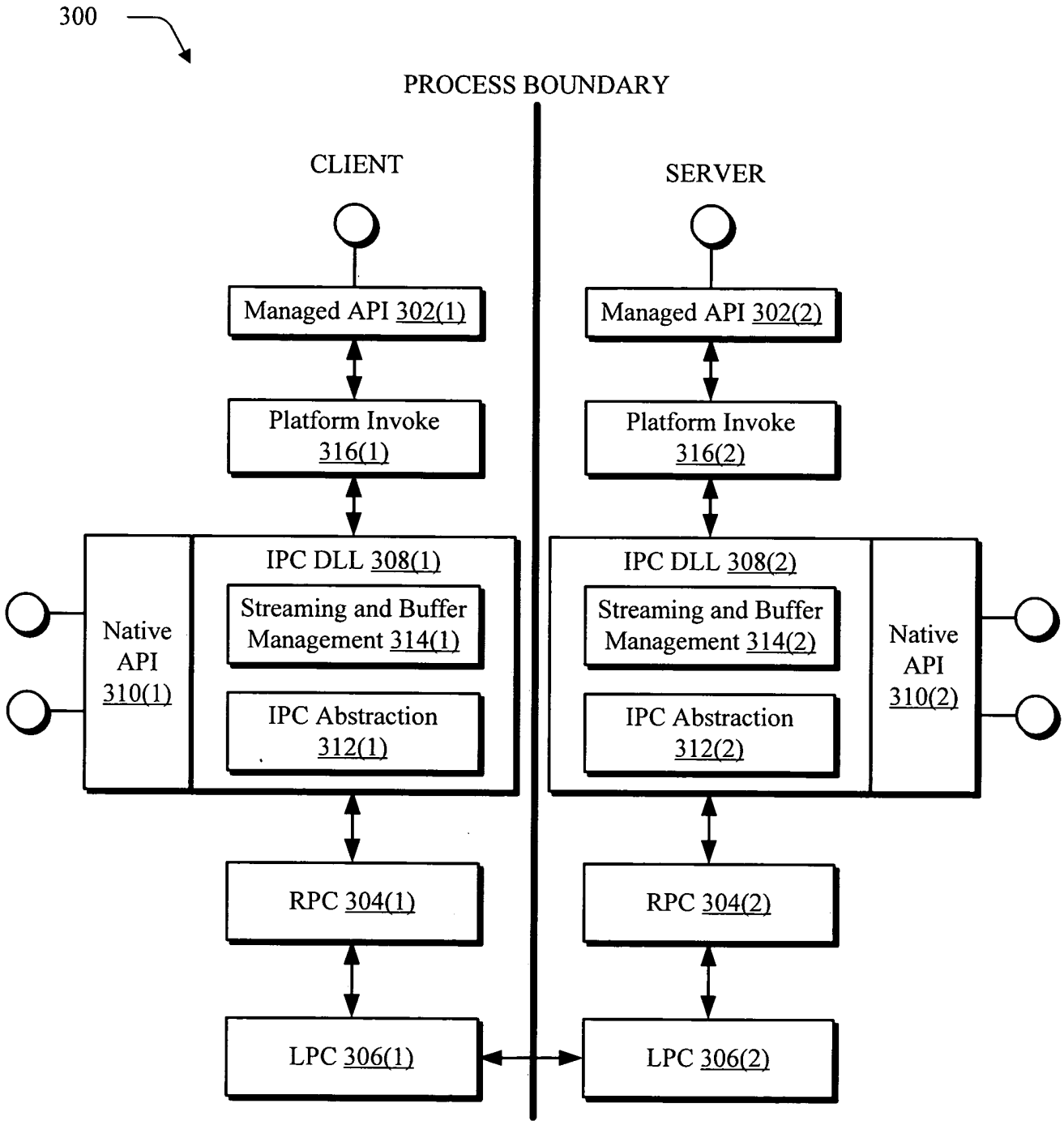
300
PROCESS BOUNDARY
CLIENT
SERVER
Managed API 302(1)
Managed API 302(2)
Platform Invoke 316(1)
Platform Invoke 316(2)
IPC DLL 308(1)
IPC DLL 308(2)
Streaming and Buffer Management 314(1)
Streaming and Buffer Management 314(2)
IPC Abstraction 312(1)
IPC Abstraction 312(2)
Native API 310(1)
Native API 310(2)
RPC 304(1)
RPC 304(2)
LPC 306(1)
LPC 306(2)

Fig. 3

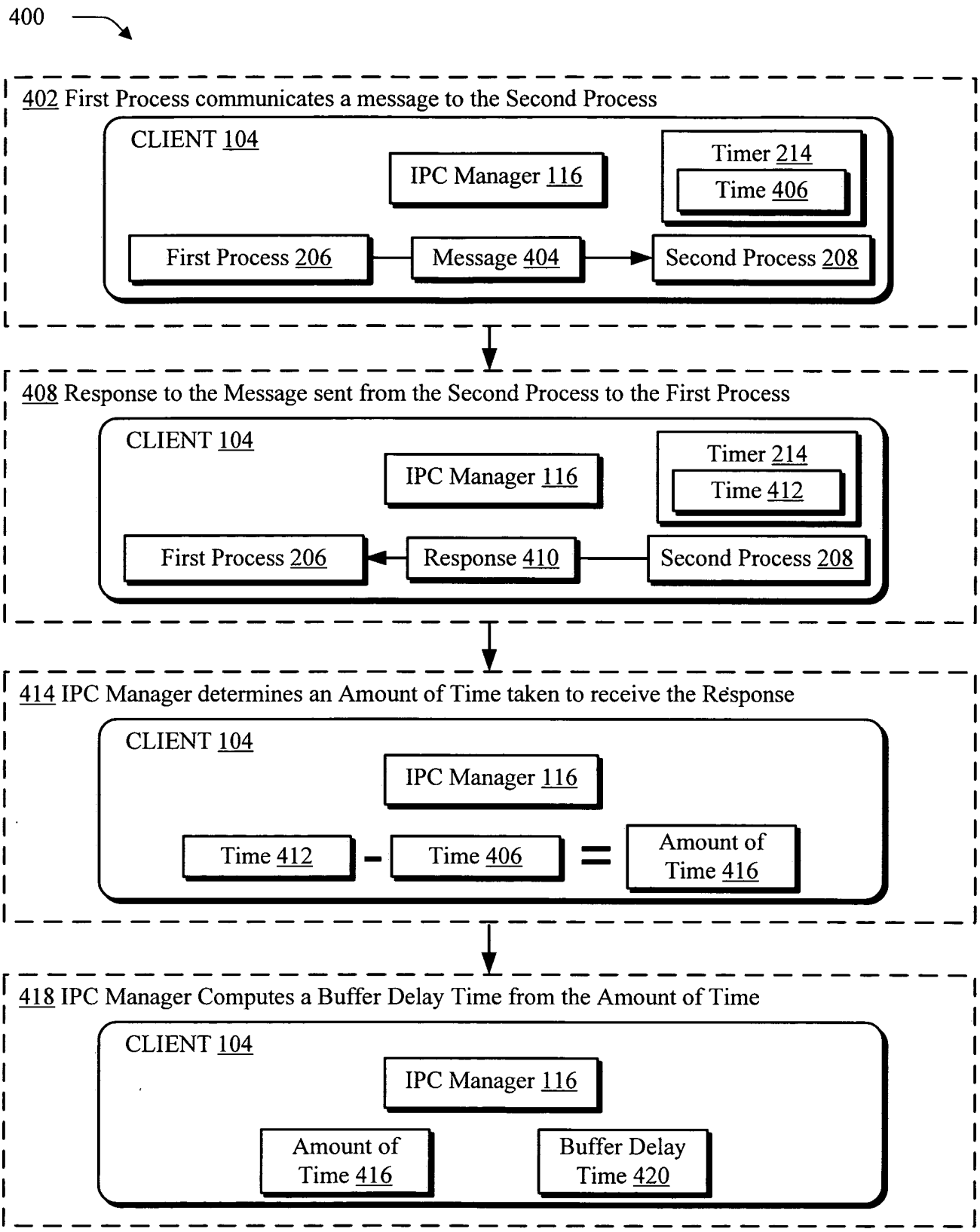
400
402 First Process communicates a message to the Second Process
CLIENT 104
IPC Manager 116
Timer 214
Time 406
First Process 206
Message 404
Second Process 208
408 Response to the Message sent from the Second Process to the First Process
CLIENT 104
IPC Manager 116
Timer 214
Time 412
First Process 206
Response 410
Second Process 208
414 IPC Manager determines an Amount of Time taken to receive the Response
CLIENT 104
IPC Manager 116
Time 412
-
Time 406
=
Amount of Time 416
418 IPC Manager Computes a Buffer Delay Time from the Amount of Time
CLIENT 104
IPC Manager 116
Amount of Time 416
Buffer Delay Time 420

Fig. 4

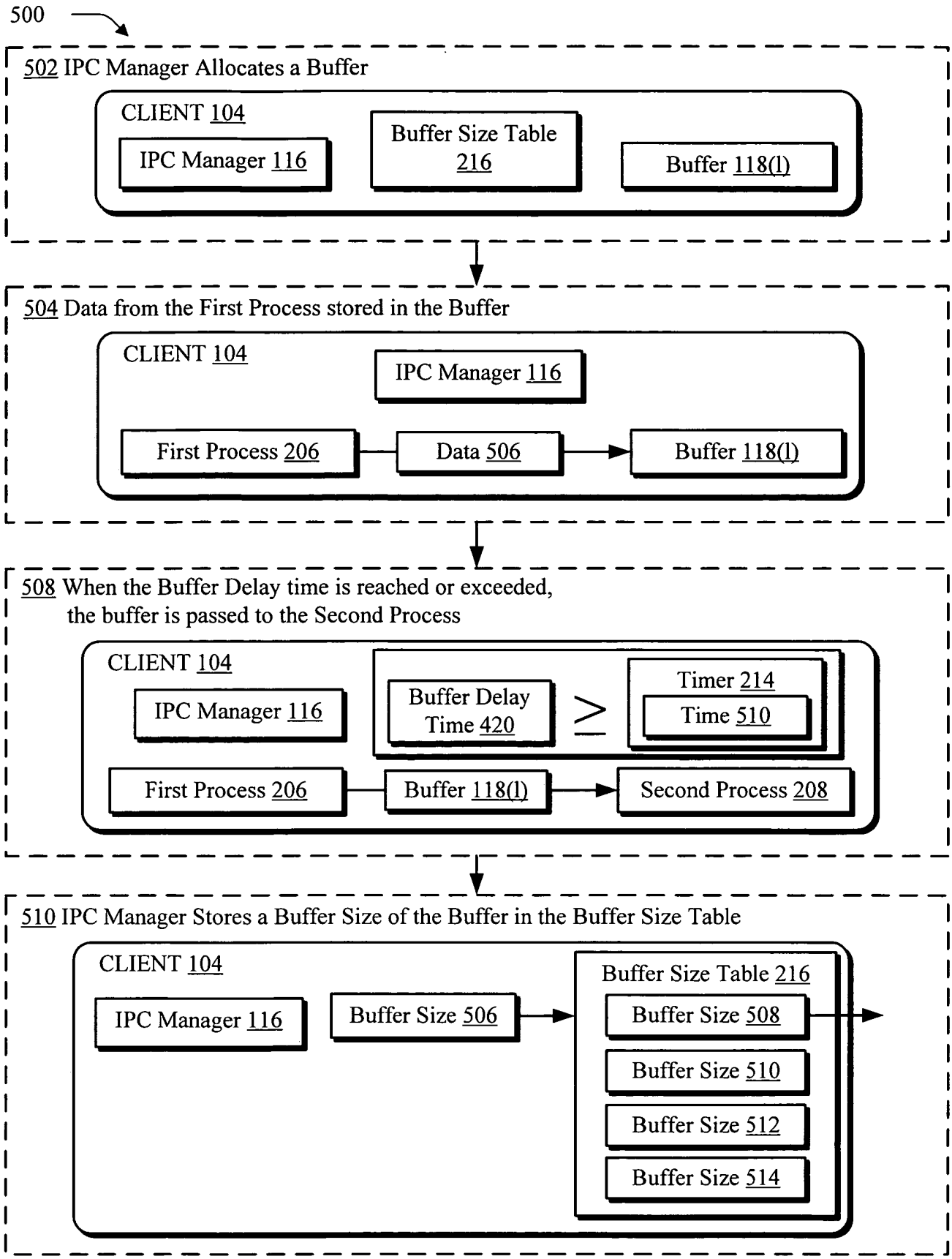
500
502 IPC Manager Allocates a Buffer
CLIENT 104
IPC Manager 116
Buffer Size Table 216
Buffer 118(1)
504 Data from the First Process stored in the Buffer
CLIENT 104
IPC Manager 116
First Process 206
Data 506
Buffer 118(1)
508 When the Buffer Delay time is reached or exceeded, the buffer is passed to the Second Process
CLIENT 104
IPC Manager 116
Buffer Delay Time 420
≥
Timer 214
Time 510
First Process 206
Buffer 118(1)
Second Process 208
510 IPC Manager Stores a Buffer Size of the Buffer in the Buffer Size Table
CLIENT 104
IPC Manager 116
Buffer Size 506
Buffer Size Table 216
Buffer Size 508
Buffer Size 510
Buffer Size 512
Buffer Size 514

Fig. 5

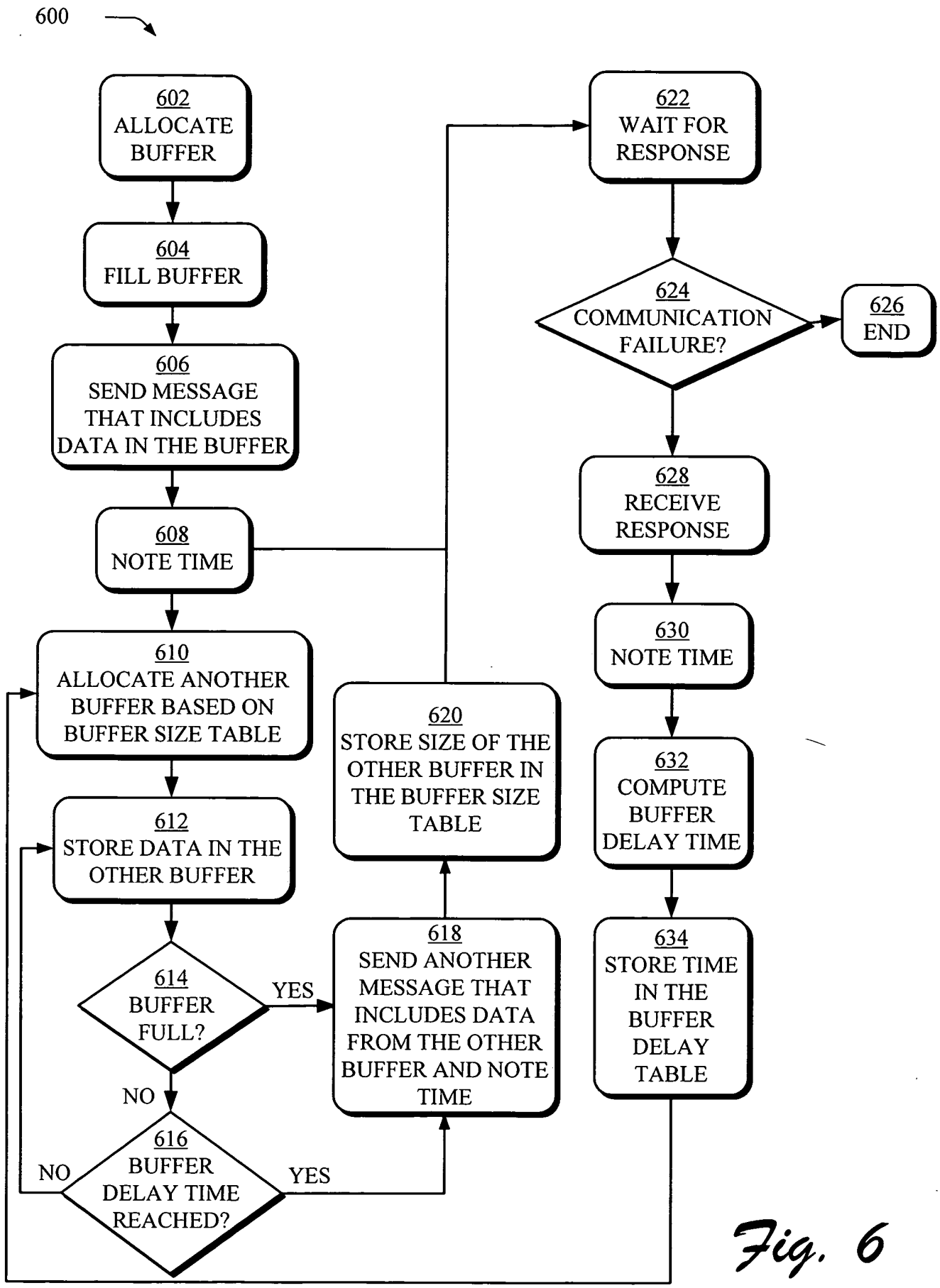
600
602 ALLOCATE BUFFER
604 FILL BUFFER
606 SEND MESSAGE THAT INCLUDES DATA IN THE BUFFER
608 NOTE TIME
610 ALLOCATE ANOTHER BUFFER BASED ON BUFFER SIZE TABLE
612 STORE DATA IN THE OTHER BUFFER
614 BUFFER FULL?
YES
NO
616 BUFFER DELAY TIME REACHED?
NO
YES
618 SEND ANOTHER MESSAGE THAT INCLUDES DATA FROM THE OTHER BUFFER AND NOTE TIME
620 STORE SIZE OF THE OTHER BUFFER IN THE BUFFER SIZE TABLE
622 WAIT FOR RESPONSE
624 COMMUNICATION FAILURE?
626 END
628 RECEIVE RESPONSE
630 NOTE TIME
632 COMPUTE BUFFER DELAY TIME
634 STORE TIME IN THE BUFFER DELAY TABLE

Fig. 6

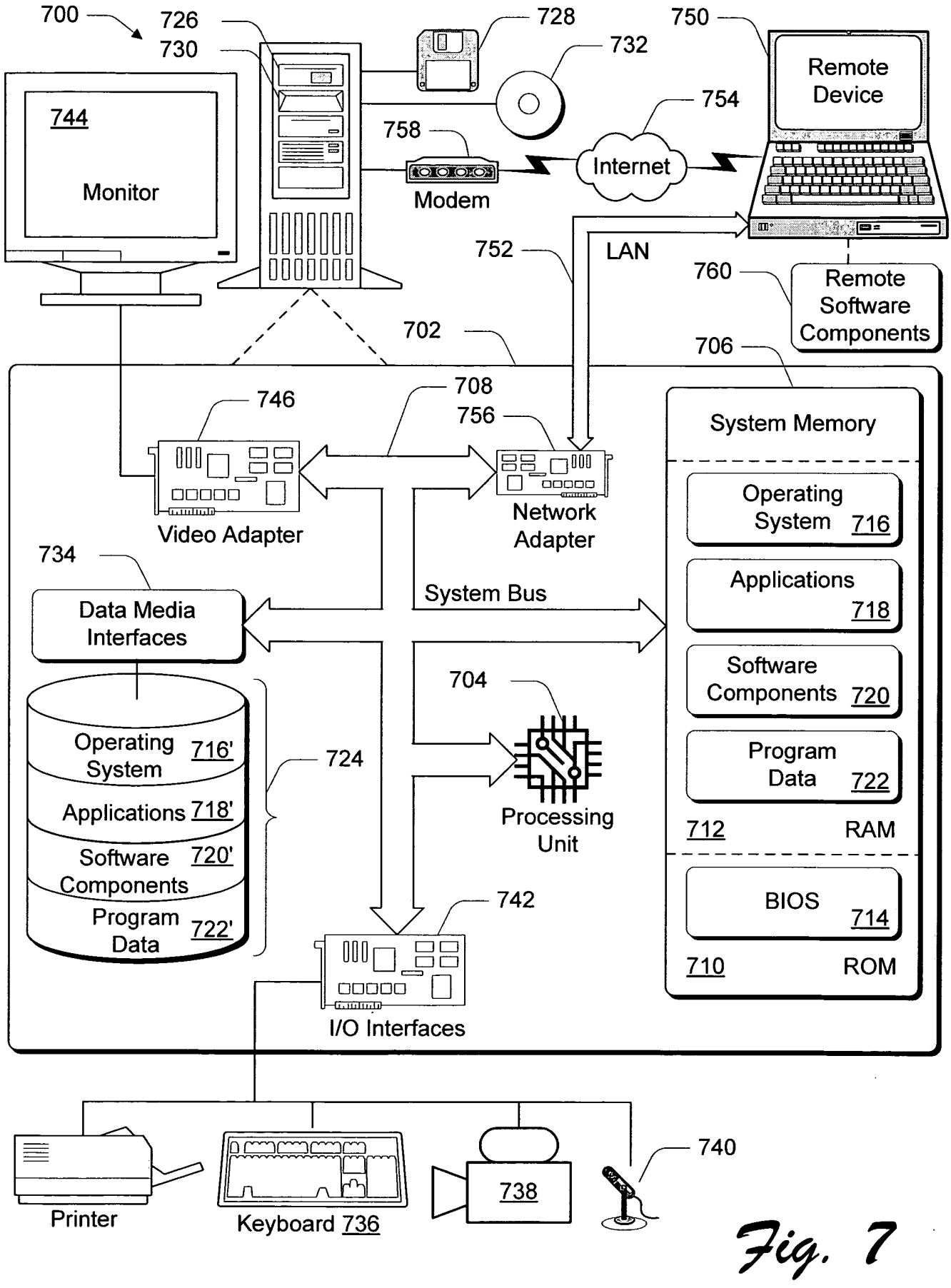
700
726
730
728
732
750
Remote Device
754
744
Monitor
758
Modem
Internet
752
LAN
760
Remote Software Components
702
706
746
708
756
System Memory
Video Adapter
Network Adapter
Operating System 716
734
Applications 718
Data Media Interfaces
System Bus
Software Components 720
704
Operating System 716'
724
Program Data 722
Applications 718'
Processing Unit
712
RAM
Software Components 720'
Program Data 722'
742
BIOS 714
710
ROM
I/O Interfaces
740
738
Printer
Keyboard 736

Fig. 7